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Article

Green Economy

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Abstract: This investigation explores Uzbekistan's conversion to a green economy while filling gaps in knowledge about combined assessments of environmental and economic and social elements for sustainability development. A mixed-methods methodology entailed gathering quantitative data by conducting survey assessments of stakeholders while additionally conducting qualitative interviews with policymakers and industry experts and leadership members. Research findings demonstrated renewable energy together with resource efficiency as opportunities for sustainable development while financial limitations as well as slow institutional changes served as main impediments. According to research findings policymakers must develop specific framework policies and dedicate significant resources toward eco-friendly technology development and launch awareness programs that aim at specific targets. A complete approach to sustainability must become a policy priority to ensure resilient growth inclusive of all populations according to Uzbekistan's specific socio-economic features.

Keywords: Economy, Policy, Energy, Finance, Growth, Climate, Industry, Resource, Technology

1. Introduction

The green economy model has emerged strongly throughout the last decade because traditional economic models exhaust non-renewable materials and cause steady environmental damage [1]. The green economy delivers a sustainable development framework through its purpose of achieving better human well-being alongside social fairness and minimum ecological scarcities and environmental dangers [2]. The concept emerged as a solution against global economic, environmental, and social crises which need complete sustainable economic restructuring [3]. The global sphere emphasizes extensive promotion of the green economy to address energy inefficiency together with climate change and ecological degradation. Central Asia particularly Uzbekistan shows strong potential for developing green economy structures because its renewable energy potential together with its existing energy efficiency capabilities and sustainable agriculture practices[3]. The research foundation bases its analysis through environmental economics and ecological economics principles. Environmental economics advances sustainable conduct by implementing Pigovian taxation combined with emissions trading processes for establishing environmental cost structures throughout the market [4]. The foundation of sustainable principles within ecological economics depends on protecting fundamental natural resources because artificial capital cannot replace them [5]. Various previous analyses define the barriers for moving towards a green economy. The policy challenges described by Barbier focus on two aspects: managing ecological shortages while securing funding for sustainable ecosystem management yet institutional resistance prevents advancement [4]. According to Krugman market-based incentives provide the

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essential economic reason for coal energy replacement which protects environmental sustainability alongside continued economic development [5].

The current achievements fail to address every existing deficiency. The integration between social assessments and economic evaluations and environmental assessments remains weak and understanding green economic systems through proper measurement tools is lacking [6]. The research introduces an entire measurement procedure that fits Uzbekistan's social and economic needs while addressing present knowledge deficiencies. The research contribution consists of uniting Weak and Strong sustainability perspectives while providing actionable policy recommendations for public servants. The development of an extensive monitoring system and transitional framework for green economy adoption will bring sustainability together with inclusiveness and resilience features [7]. The expected outcome will produce a strong evidence-based policy approach that allows policymakers and industry stakeholders of Uzbekistan to track and strengthen their green economic transition performance. The developed framework shows potential for usage in comparable sustainability situations worldwide to support global sustainability advancement.

2. Materials and Methods

The research method investigates the sequential approach towards implementing green economy models in Uzbekistan which combines renewable energy systems with resource efficiency methods and sustainable agricultural techniques. International research from academic literature and experimental studies form the basis of the research methodology according to [8]. The initial research phase consists of evaluating international protocols together with their success measures and limitations concerning green economy transformations. Both international organization literature alongside academic material serves as the foundation for practical and theoretical investigation of the study [9]. The research incorporates a blended methods approach for its empirical parts. A structured survey technique collects information through questionnaires from a total of 200 representatives who belong to three professional categories of industry experts and policymakers and business stakeholders who specialize in renewable energy and sustainable agriculture and resource management sectors in Uzbekistan. Topics in the questionnaire cover how widespread the awareness of the green economy is and how well its policies function while identifying barriers it faces and opportunities for development. A total of 20 key informants will be assessed through semi-structured interviews as part of the qualitative data collection process. Purposive sampling will determine the participant selection. The research participants consist of government personnel alongside industrial leaders and NGO representatives and academic field specialists. Deeper institutional insights and financial mechanisms and policy instruments that shape Uzbekistan's green economy implementation can be obtained through the interview process. The data analysis process will combine surveys with SPSS software to examine patterns and feedback about green economy transformation through descriptive statistical evaluation and inferential procedures. Data collected through interviews will be processed by thematic analysis using NVivo software to discover patterns together with elements of meaning and significant insights from interviewed subjects. This methodology’s breakthrough comes from combining quantitative measurement with purpose-built qualitative components to match Uzbekistan’s current social and economic needs. Through detailed recommendations the outcome will guide policymakers and stakeholders towards making effective decisions that lead Uzbekistan towards sustainable green economic development. The acquired knowledge and systems provide practical examples that can help other areas both domestically and internationally [10].

3. Results

The empirical investigation provided relevant knowledge about Uzbekistan's existing green economy situation and future development prospects.

Figure 1 results clearly depict how different green economy sectors will be regarded in the future.

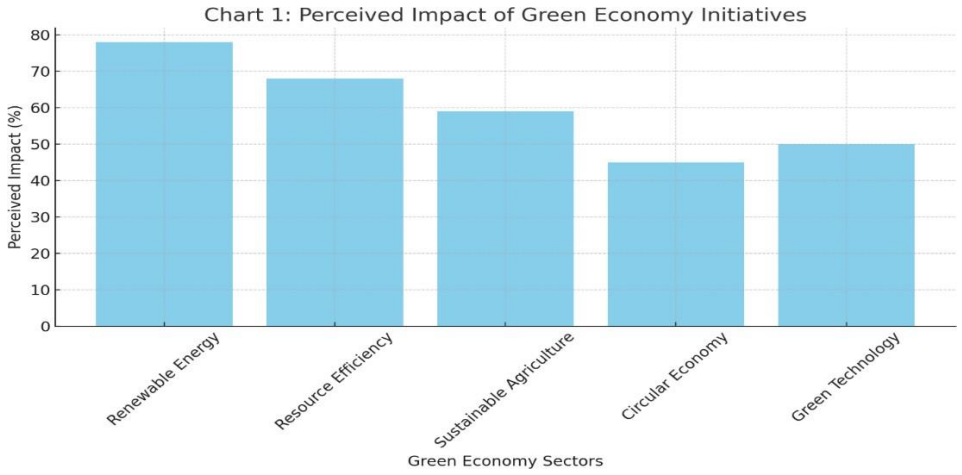

Figure 1. Perceived Impact of Green Economy Initiatives.

Survey respondents selected Renewable Energy as their top preference because it offers the best strategy for Uzbekistan to use advanced technology to create a green economy with low emissions and dependable energy infrastructure. Second to Renewable Energy as the most impactful aspect according to the survey participants because respondents recognized both resource efficiency's economic benefits and resource excellence. Multiple chances exist in the current situation to build resource management policies that will be both economical and innovative. The fundamental role Sustainable Agriculture plays to achieve sustainability through increased productivity and reduced environmental risks results in its high positive perception level (59%). Green Technology with Circular Economy maintains a mid-range perception level at 50% and 45% which can be enhanced by raising awareness and strengthening frameworks and investments to optimize their performance throughout Uzbekistan.

The Chart 1 analysis demonstrates the necessity for specific action plans and policy support systems that will close the awareness-to-implementation gap in renewable energy and resource efficiency since these areas show the most promise according to survey participants.

4. Discussion

The findings from this research highlight critical insights and potential strategic pathways for Uzbekistan’s transition towards a green economy. The study data indicates renewable energy stands out as the main segment since specialists recognize its extreme significance for sustainable economic growth. Evidence shows alignment with international development which recognizes renewable energy as a vital element for sustainable progress because it helps lower carbon outputs and ensures stable power distribution [11]. High renewable energy potential within Uzbekistan gives policymakers the ability to stimulate growth through funding increases for renewable technology alongside promotion of innovation and establishing suitable regulatory frameworks for market solutions. The experts ranked resource efficiency as the second essential sector which renewable energy should follow. Research participants show strong resource efficiency understanding because this practice optimizes resource usage to minimize waste and enhances economic output together with resource administration. Specific education campaigns and customized guidelines will enable Uzbekistan to increase its resource-

efficient practices [12]. It will accelerate sector development if the government adopts efficiency standards coupled with subsidies for efficient technologies. Modern Ecology and food supply security needs promoted sustainable agriculture to become a core industry. The agricultural abundance of Uzbekistan enables the implementation of precision agriculture through organic farming together with agroecology practices since these methods reduce environmental damage while maximizing agricultural outputs [13]. Officials from government should establish complete support programs including agricultural technological resources and technical education initiatives for continued advancement of this transformation effort. The present state of green technology together with circular economy approaches demonstrates reasonable capacity though they suggest promising future development prospects. Effective communication programs should show practical benefits combined with actual implementation possibilities because the current understanding falls in the middle range. The deployment of experimental projects along with mandatory guidelines leads to sectoral recognition by fostering broader adoption in the market [14], [15].

5. Conclusion

Scientific evidence shows Uzbekistan can move toward green economy through its sustained backing of renewable energy projects and resource conservation measures. Modern economic transformation needs increased efforts because both financial restrictions and institutional opposition create barriers for pursuing contemporary changes. Research evidence shows Uzbekistan needs to build sustainable solutions which suit its national economic situation and social community structures. The findings from stakeholder research must lead policy formation that drives the creation of technological systems and environmental awareness standards and includes specified regulations. Research teams must monitor their implemented strategies for developing new policies that establish economic resilience and availability throughout society.

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